8. SANDING AND PAINTING BMPS

The sanding dust generated when sanding boat bottoms contains metal compounds (principally copper) that are toxic to marine life and the removal of paint from the bottom of a boat produces a waste product which can harm the environment. Discharge of these materials to surface waters or land is prohibited. Dust should not be allowed to become wind-borne or otherwise leave the containment area.

RECOMMENDED PRACTICES

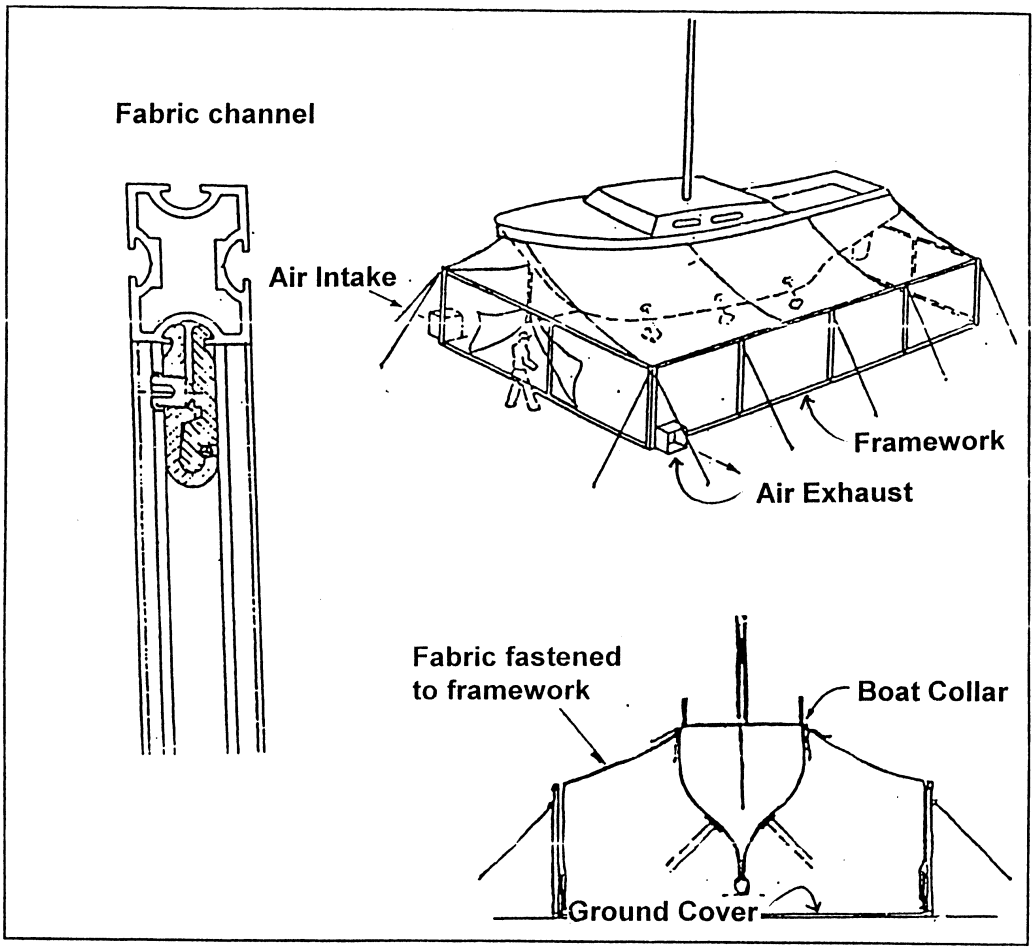
Wastes related to spray painting are also a major source of environmental pollution. Several steps can be taken to reduce waste emissions from painting operations.

- Carefully control inventory so that waste paint and solvents are kept to a minimum.
- Store waste paint, solvents, and rags in covered containers to prevent evaporation to the atmosphere.
- Whenever possible, use solvents and coatings with low volatility.
- Use techniques such as brushing and rolling to reduce overspray and solvent emissions.
- Spray painting on land should occur over an impermeable surface and in such a manner that overspray does not fall on open ground or surface waters.

Perform abrasive blasting within spray booths or plastic tarp enclosures. Ideally, sandblasting should occur within a rigid walled booth that ensures the containment of the blasting material and the residue. If a permanent structure is inappropriate because of space, cost, or other limitations, then the area around the vessel to be blasted should be enclosed with tarps. The tarps should extend high enough above the blasting surface to contain the blasting material and residue. Because tarps are not rigid, they do not eliminate wind flow through the blasting area, and so they allow the wind to carry blasting material and residue into surface waters. If tarps are used, the blasting should be closely monitored and planned to prevent wind from carrying the blasting material and residue out of the tarped area and into sensitive areas.

Containment is made easier if the blasting is consistently performed in the same area of the facility. This area should be in a location away from the shore and it should be cleaned regularly. A facility owner may choose to locate the blasting area at the farthest corner from the water's edge. Records should be kept that document the volume of blasting material on site and the level of toxins contained in the material. Used blasting material should be tested and disposed of properly, following the procedures described in “Hazardous Materials and Wastes BMPs", page **Error! Bookmark not defined.**.

Perform outdoor maintenance over tarps or hard surfaces. This practice prevents paint dust and other waste materials from washing throughout the facility when it rains. Hull maintenance activities should be done under a roof (where practical) and over hard, impervious surfaces such as cement. The use of hard impervious surfaces in hull maintenance areas facilitates the collection of paint chips and sandings. Once the maintenance activity is completed, the material on the tarp should be collected and disposed of properly. If scraping or blasting is done outdoors (with protective sheeting), avoid working on windy days when control of the protective covering is difficult. The bottom edges of tarps and plastic sheeting should be weighted to keep them in place during light breezes.



Example of sandblasting/ spray painting shield system.
Source: Pier Pressure Marine Systems, Inc.

FIGURE 11. SANDBLASTING/PAINTING SHEILD SYSTEM

Provide and clearly mark designated work areas for outside boat repairs and maintenance. If a facility is large enough, one section of the yard should be dedicated for outside boat repairs and maintenance. Boats should be

moved to this location before any maintenance activity (such as sanding, painting, fiberglassing, and woodworking) is undertaken. The work area should be well marked with signs. Do not permit work outside these designated areas.

Clearly post a list of boat owner responsibilities and any restrictions when boat owners are using the work area. Such rules may include the prohibition of hazardous materials, the maximum time a boat may be left in the area, and directives that the boat owner clean up each day and when the work is done.

The work area should allow for easy removal of waste and debris that is generated from maintenance activities. Develop a system to manage requests to use the work area, to move boats to and from the maintenance areas, and to enforce the use of best management practices.

Use vacuum sanders both to remove paint from hulls and collect paint dust. This new technology is effective at capturing paint dust during sanding. Immediate capture prevents paint dust from entering the surface water, makes cleaning up the work area easier, and increases the speed with which a boat bottom can be completely sanded. Vacuum sander rentals could be provided by the facility.

Clean (trash, sanding, paint chips, etc.) immediately after any maintenance activity. Require boat owners to spend a few minutes cleaning up their work area after they have performed a maintenance activity that generates waste. Immediate attention to sweeping or vacuuming the work area and collecting and disposing of the waste properly greatly decreases the amount of pollutants that are available to enter the surface water. For added ease in cleanup, cover nearby storm drains to prevent waste from being washed into pipes that directly discharge into surface waters. Dispose of collected material properly.

Provide covered containers for solid waste generated within the facility. Once material generated during maintenance activities is properly collected, it must then be disposed of properly. Containers to collect frequently generated waste should be located near maintenance areas or within accessible areas of the facility. The number and type of containers are dependent on the type and volume of waste collected. If containers are outdoors, they should be properly covered to prevent rainwater from collecting in them. A proper cover also ensures that the collected material will not be washed out when it rains.

Spent sandblasting grit, scrapings, and debris should be stored under cover in a manner that minimizes contact with process water or stormwater. Spent sandblasting grit and scrapings may be classified as a problem solid waste or as a hazardous waste if soluble metals are present in large amounts. For disposal of this waste material see p. **Error! Bookmark not defined.**.

Provide a Spray Booth. A spray booth should be used whenever possible to capture overspray. However, spray booths concentrate paints and, as a result, represent a hazard to both employees and the environment. Booths must meet the local building and fire code requirements and must ensure adequate

ventilation for people working in them. Paint guns used in spray booths should be either High Velocity Low Pressure (HVLP) or High Efficiency Low Pressure (HELP) types, which are rated at 65% efficient paint transfer. Otherwise, painters should use electrostatic paint spraying methods. When replacing existing spray guns, convert to HVLP or HELP types.

Cleaning paint guns can also be hazardous since the spent solvent must be treated as hazardous waste and not discharged directly into drains. Cleaning should be done in an enclosed gun cleaner/recycler machine.

Outdoor Painting Paint and solvent mixing, brush cleaning, and similar activities should not be conducted on open floats or on structures over the water, but should be done in an on-shore work area. Drip pans or other protective devices should be used for all paint mixing, solvent transfer, or equipment clean up operations unless the operations are conducted in controlled areas away from storm drains, surface waters, shorelines, piers, docks, and floats. When painting from open floats, paints should be kept in cans of one gallon or less. Paint cans should be kept in drop pans with drop cloths or tarps underneath the drip pans. Painting and varnishing of vessels in water should generally be limited to interior surfaces or "brightwork", where paint materials and spills can be contained and prevented from entering the water.

Use and Manage Paints and Wastes Properly. Encourage the use of non-toxic, high bonding, easily cleaned hull coatings. More alternative coatings are anticipated to become available as technology advances. An example is the non-toxic, Teflon filled, vinyl ester system such as "Max-Pro-Coat" marketed by Pier Pressure Marine Systems, Inc.

The use of anti-fouling TBT (tributyltin) containing paints with a release rate greater than 4.0 micrograms per square centimeter is prohibited in the State of Maine. Older cans of paint with release rates greater than 4.0 micrograms per square centimeter should be disposed at a hazardous materials collection site (Call the Bureau of Remediation and Waste Management at the Maine DEP).

Paint and solvent spills present a threat to the waters of the state and, therefore, must be prevented from reaching storm or deck drains and subsequently discharging into the water. Cleanup solvents should be disposed of as described in "Hazardous Materials and Wastes BMPs", page **Error! Bookmark not defined.**. Adopt and implement the spill contingency measures identified under "Spill Prevention BMPs, page 12-1.